REMARKS

1. Drawings.

37 C.F.R. § 1.83(a). The Examiner objects to the drawings for failure to show various features specified in the claims.

Fixation sites. The fixation sites are shown in Figures 1 and 5. In the figures, there are a series of holes in the side of the frames, designated by numeric designator (11) in Figure 1. These holes match the holes (24) shown in Figures 2-4. Accordingly, the plurality of fixation sites is clearly shown in the figures.

Standard interconnection means. The holes shown in Figures 1 through 5 provide fixation sites. The fixation can occur through standard means, which are known to those skilled in the art, such as by use of screws or bolts. The specification refers to "mounting pins that secure each module mounted on the frame." Accordingly, this element of the claim is shown in the figures.

Service trough. This element of the invention is set forth is Claim 2. Because Applicant has cancelled Claim 2 with the present submission, this objection is moot.

Dedicated path. Figure 8 shows a truck and a module and an interconnection there between, for example, via Internet or video over twisted pair, which constitute dedicated paths about the platform for effecting individual control over the modules. Accordingly, this limitation of the claims is depicted in the figures.

Plurality of custom interfaces. Figure 8 shows a computer console (88), the console display, toggle switches, and the like. These items constitute a plurality of custom interfaces, for example, for any of contact closures, lighting, power control, and interface to computers. Accordingly, this limitation of the claims is shown in the figures.

Means for recognizing a module's personality and location. This claim limitation is presented in Claim 6. Claim 6 is amended by this submission, to cancel therefrom the limitation with regard to "location." With regard to a module's "personality," reference is made to at least Fig. 8, which shows a "module" coupled via an Ethernet connection to a "truck." The truck includes a "vehicle computer" 90. In the specification, starting at page 3, line 33, Applicant describes the "computer." The module's "personality" is discussed on page 4, line 8-12. See, also, page 9, lines 5-27. Accordingly, this limitation of the Claims is shown in the figures.

A plurality of specialized operator stations. This claim limitation is set forth in Claim 7. With this submission, Claim 7 is cancelled and, therefore, this objection is moot.

37 C.F.R. § 1.84(b)(5). Reference signs 80, 81, and 82 are shown in Figure 7. Accordingly, this objection is deemed to be moot.

With regard to the reference characters not matching the description, Applicant inadvertently failed to include a replacement description with Applicant's prior submission. Such replacement description accompanies this submission and includes all the reference characters identified by the Examiner at paragraph 4 of the Office Action.

2. Specification.

The Examiner indicates that he believes there is a repeated sentence on Page 8, Lines 8-10. However, the sentence is not repeated. One sentence refers to "Type I" and another sentence refers to "Type II." Accordingly, the Specification is correct as currently presented.

3. 35 U.S.C. § 112.

Applicant has amended Claim 6 to address the Examiner rejection. Accordingly, the rejection of Claim 6 under 35 U.S.C. § 112 is deemed moot.

Applicant has cancelled Claim 17. Accordingly, the rejection thereof is deemed moot.

The cancellation of claims by Applicant herein should not be taken to be a concession, tacit or otherwise, that the Applicant concurs with the Examiner in the rejection or that the Applicant concedes that there is any merit to these rejections. Applicant has cancelled these claims for purposes of expediency, to reduce the number of issues outstanding with regard to obtaining an allowance of the application. Applicant expressly reserves the right to present claims of similar scope and comprising similar subject matter at a latter time and in a further proceeding of the Applicant's choosing.

4. 35 U.S.C. § 103.

Applicant notes with thanks that the Examiner has withdrawn the rejection under 35 U.S.C. § 102. In the present Office Action, Claims 1-8 and 14-18 are rejected under 35 U.S.C. § 103 as being unpatentable over Kempen, *et al*, in view of Glatzmeier, *et al*.

Applicant respectfully disagrees.

Kempen. Applicant discussed Kempen at some length in Applicant's previous submission. The Examiner appears to acknowledge, at least in part, the merits of Applicant's arguments, and in view of them, has withdrawn the rejection under 35 U.S.C. § 102. Accordingly, Applicant's comments will focus primarily on Glatzmeier.

The Examiner relies on Glatzmeier, column 1, lines 20-28 for the proposition that it would be possible to "provide rapid and free assembly of variously fitted equipment cabs...due to rapidly changing conditions of use." Here the Examiner appears to be relying not so much on Glatzmeier as on German Patent DE-C-35 17 290, which Glatzmeier characterizes as teaching the state of the art. The German patent referenced by Glatzmeier has a U.S. counterpart, *i.e.*, USPN 4,830,421. In this regard, Glatzmeier appears to mischaracterize the state of the art upon which the Examiner's rejection is based. The modules cited in the German reference are inert equipment racks fitted into the body of the vehicle, which can be changed out for other racks. The racks are not affixed to a platform and are not sized as a standardized fraction of the platform. There are no electrical or fluid interconnections to these racks. The attachment mechanism is entirely in the fixed body of the vehicle, attaching to pins or an axle on each module. There is no mention of automatic identification of the modules.

In contrast, Applicant claims modules that are not fitted into the body of the vehicle, but that together comprise the body of the vehicle. There is no indication in the German reference that the body itself is changeable or modular. Rather, the only teaching in the reference is that equipment racks may be fitted to a body. When Glatzmeier is properly construed in view of the teachings of the reference cited by Glatzmeier, it appears that Glatzmeier is irrelevant to the invention as claimed. Accordingly, only Kempen remains as a reference that is of some relevance to the invention. However, as pointed out in Applicant's previous response, Kempen is only concerned with single-module vehicles. The Examiner acknowledges that Kempen does "not disclose said fixation sites defining fractional locations along an overall platform extent, wherein said platform receives a plurality of said modules, wherein said modules have an extent that is equal to, or that is a fraction of, said platform extent, and wherein any number of modules having a total, combined extent that is less than or equal to the extent of said platform may be attached to said platform at any given time." Because this is not taught by Glatzmeier, based upon further review of the German reference upon which Glatzmeier has based his statements, there is no teaching of this aspect to the claimed invention. Lacking a teaching of each and every element of the claimed invention in the proposed combination of references, there is no *prima facie* showing of obviousness. Accordingly, Applicant's claims are deemed to be in allowable condition and early Notice of Allowance is respectfully requested.

5.

The various other rejections of Applicant's dependent claims, based on art, are deemed moot in view of the allowability of Applicant's base claims.

Should the Examiner deem it helpful, he is encouraged to contact Applicant's attorney, Michael A. Glenn, at (650) 474-8400.

Respectfully submitted,

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The modules are designed to have a standard mechanical connection with the underlying vehicle platform. Preferably, a mechanically simple system such as a clevis pins is employed, ensuring for simple, rapid, and reliable installation of the modules.

Installation of each module engages, preferably automatically, a series of connections, including electric, hydraulic, and pneumatic power. Data can be passed over Ethernet or similar connection. Video connections can also be provided.

Coordination of the modules is handled by a central computer in communication with each module. Two control schemes are envisioned. In the first scheme, the central computer is equipped with software capable of controlling the equipment within each module. Upon installation, each module identifies itself. In response, the central computer displays to the operator interfaces and controls appropriate for operation of the installed module, and relays commands received through the interface and controls to the equipment within the module. In this scheme, the central computer contains software appropriate for operation of each module that may potentially be installed.

In the second scheme, each module is equipped with a dedicated microprocessor for control of equipment within the module. Upon installation, each module identifies itself. During operation, the computer onboard the module sends information to the central computer indicating a set of operator interfaces and controls appropriate for operation of the module. The central computer need only coordinate the display of the control interfaces for the several installed modules. As such, the central computer can be forward compatible with newly designed modules.

Identification of installed modules and coordination of module control may be implemented through a protocol such as Sun Microsystems's Jini.

Figure 1 shows a vehicle platform frame ~~(10)~~ 10 for receiving modules of a modular vehicle according to the invention. The frame is of a standard width that matches the width of a mounting bracket on the base of each module. Holes 11 of a ~~standardization~~ standard size are drilled at regular intervals along the length of the frame for receiving mounting pins that secure each module mounted on the frame.

Figure 2 shows a frame ~~(22)~~ 22 of a first module according to the invention. The forward-rearward length 23 ~~(L)~~ of the frame is a standardized fraction of the vehicle platform frame. The width of the mounting bracket ~~(20)~~ 20 on the base of the module frame matches that of the vehicle platform frame. Holes 24 drilled in the module frame match the holes placed at regular intervals on the vehicle platform frame. Similarly, Figures 3 and 4 show a frame ~~(30, 40)~~ of a second 30 and third 40 module respectively, according to the invention.

Figure 5 shows the frame of the third module ~~(40)~~ 40 engaged with the vehicle platform frame 10 ~~(10)~~. The standardized width and hole spacing of the vehicle platform frame and module mounting bracket ensure that the module can be placed at a variety of locations on the vehicle platform frame. Figure 6 shows the first 22, second 30, and third 40 modules ~~(22, 30, 40)~~ engaged with the vehicle at the vehicle platform frame 10 ~~(10)~~.

Figure 7 shows a power distribution scheme for a modular vehicle according to the invention. The power system onboard each module (indicated by the dashed box 70 ~~(70)~~) provides power to one or more safety functions 71 ~~(71)~~ and is connected thereto by a relay 72 ~~(72)~~, breaker 73 ~~(73)~~, and contactor 74 ~~(71)~~ to a fused transfer 75 ~~(75)~~. The relay is controlled directly from within the cabin of a modular vehicle. Power is also provided directly from the breaker to the non-safety functions 76 ~~(76)~~ of the module. The power within each module may also contain a DC - DC conversion 77 ~~(77)~~ to alter the voltage supplied to the module.

The fused transfers are also connected via a contactor to the vehicle batteries 78 ~~(78)~~, and to the electrical systems of the non-module vehicle devices 80 ~~(80)~~. A connection is also provided, via another contactor, to a one or more "technical batteries" ~~(BD)~~ ~~(79)~~ 79 contained in the power module. These batteries may be charged directly from an auxiliary alternator ~~(81)~~ 81.

Finally, the fused transfers are connected to an inverter 82 ~~(82)~~ that can provide power to the vehicle when connected to a 120V shore power line. This allows for powering of all vehicle and module devices directly from the shoreline, and for charging of the vehicle and power module batteries.

Figure 8 shows a diagram illustrating a control scheme for a modular vehicle according to the invention. In the diagram shown, lines 83 ~~(80)~~ carry communications ~~with safety functions, lines (82) carry data, lines (84) carry communications~~ between peripherals and computers, lines ~~(88)~~ 84 carry data, lines 85 carry communications with safety functions, lines 86 carry indicate video signals, and lines ~~(89) indicate~~ 87 carry audio signals.

The safety functions are controlled directly from a control panel 105 containing a number of toggle switches. For each module, a switch is assigned to the main module power. A number of other switches are assigned to each safety critical function on the module. Each toggle switch is connected with the corresponding module function with a dedicated wire. Additionally, the control panel may be connected to the vehicle computer to monitor the vehicle state.

Data are carried via an Ethernet carried on Category 5 twisted pair wiring. The console computer 88 ~~(81)~~ with which an operator interfaces, the airport wireless (802.11) networks 89, the vehicle computer 90 ~~(83)~~, the satellite tracking Internet terminal 91 ~~(85)~~, the ~~rabbit controller (87)~~ analog/digital input/output microprocessor 92, surveillance receiver controls 93 ~~(89)~~, and the panoramic video processing unit 94 ~~(91)~~ are all connected to the Ethernet via an Ethernet switch 95.

The peripherals also operate over Category 5 twisted pair wiring. All peripherals are integrated with a Category 5 KVM switch 96.

Video signals obtained from devices throughout the main vehicle and modules are routed along Category 5 wiring to an appropriate destination using a matrix switch. Greater detail is provided in Figure 9.

Finally, the audio obtained from the surveillance receivers, as well as other sources such as satellite radio, is handled by an audio mixer 97 ~~(93)~~. The audio is also routed over Category 5 wiring. The behavior of the audio mixer is addressable using serial controls form the video streaming device and video recorder 98 ~~(95)~~.

Figure 9 shows a scheme for routing video signals in a modular vehicle according to the invention. Video from leftward (L), rightward (R), downward (D), and backward (B) viewing cameras; a mast mounted camera (M), and a forward looking infrared camera (FLIR); a digital satellite system (DSS), and a weapons system cameras (W) are all provided to a 12x4 matrix switch 99. The switch provides signals to a video-streaming

server 100 may handle more than one signal simultaneously, and also incorporates audio from the audio mixer, as in Figure 8. Video signals are also provided to a video recording device 101 and a console based monitor 102. Finally, signals may be routed to a display 103 integrated into a rear view mirror of the vehicle.

Although the invention is described herein with reference to the preferred embodiment, one skilled in the art will readily appreciate that other applications may be substituted for those set forth herein without departing from the spirit and scope of the present invention. Accordingly, the invention should only be limited by the Claims included below.